UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,231	07/24/2001	Jack Regula	136.1005.01	4335

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SWERNOFSKY LAW GROUP PC
P.O. BOX 390013
MOUNTAIN VIEW, CA 94039-0013

EXAMINER
KNOLL, CLIFFORD H

ART UNIT	PAPER NUMBER
2112	

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _14 April 2005_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-42_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-42_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _24 July 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☒ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _attached_

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to communication filed 4/14/05. Currently claims 1-42 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

In view of the Appeal Brief filed on 4/14/05, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth infra.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111; or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

1.   *Claims 1-3, 15-16, 19-21, 34-35, and 38-39 are rejected under 35 U.S.C. 102(e)*

as being anticipated by Carey (US 6460174).

Regarding claims 1 and 38, Carey discloses an on-chip (e.g., col. 1, lines 41-45,

col. 2, line 65—col. 3, line 5) communication bus (e.g., Figure 1, "4") and a plurality of

stations that couple (e.g., Figure 1, "8", "10") on-chip components (e.g., Figure 1, "6") to

the bus (e.g., col. 2, lines 33-36), where each station has a dedicated track which it can

use to send information to other stations (e.g., col. 2, lines 29-30, in particular Carey

discloses "dedicated tracks" as exclusive or a "fully connected crossbar" bus as distinct

from a "shared connection" or a "mixture" thereof; also see col. 13, lines 47-50, "fully

connected crossbar").

Regarding claim 2, Carey also discloses packet-based communication (e.g., col.

4, lines 40-42).

Regarding claim 3, Carey also discloses an inter-integrated circuit component

(e.g., col. 2, lines 36-39).

Regarding claim 15, Carey also discloses two components coupled to the bus

through one of the stations (e.g., col. 2, lines 36-39), where the components are

selected from a group that includes a general input/output (I/O) interface (e.g., col. 2,

lines 34-39, "external interface circuitry").

Regarding claim 16, Carey also discloses smaller multiplexors distributed (e.g.,
col. 12, lines 3-4), pipeline storage elements to maintain transmission speed (e.g., col.
9, lines 37-41).

Regarding claim 19, Carey discloses a method of communicating between a
plurality of stations coupled to on-chip components (e.g., col. 1, lines 41-45, col. 2, line
65—col. 3, line 5), and communicating between stations using an on-chip
communication bus (e.g., col. 2, lines 33-36; Figure 1, "4"), where each station has a
dedicated track which it can use to send information to other stations (e.g., col. 2, lines
29-30, in particular Carey discloses "dedicated tracks" as exclusive or a "fully connected
crossbar" bus as distinct from a "shared connection" or a "mixture" thereof; also see col.
13, lines 47-50, "fully connected crossbar").

Regarding claim 20, Carey also discloses packet-based communication (e.g.,
col. 4, lines 40-42).

Regarding claim 21, Carey also discloses an inter-integrated circuit component
(e.g., col. 2, lines 36-39).

Regarding claim 34, Carey also discloses more than on component coupled to
the bus through one of the stations (e.g., col. 2, lines 36-39).

Regarding claim 35, Carey also discloses smaller multiplexors distributed (e.g.,
col. 12, lines 3-4), pipeline storage elements to maintain transmission speed (e.g., col.
9, lines 37-41).

Regarding claim 39, Carey also discloses a requester circuit for requesting grant;
the signal incorporates one of a plurality of priorities (e.g., col. 6, lines 47-49).

Claim Rejections - 35 USC § 103

2.   *Claims 4-14, 22-33, and 40-42 are rejected under 35 U.S.C. 103(a) as being*

unpatentable over Carey as applied to respective parent claims supra, in view of

Hochschild (US 5546391).

Regarding claim 4, Carey also discloses an initiator that requests permission to

transmit outgoing data over a track to another station and that transmits the outgoing

data (e.g., col. 5, lines 1-4), an arbiter that evaluates requests and selects a track (e.g.,

col. 2, lines 52-57), and a target that receives the incoming data (e.g., col. 2, line 40).

Carey discloses separate arbiters (e.g., Figure 2, "38", "42") for the given transport (e.g.,

Figure 2, "34", "35", col. 3, lines 50-55), and discloses dedicated tracks that dedicate

transport (col. 13, lines 47-50, "fully connected crossbar"), and discloses multiple

arbitrations in a given cycle for the dedicated tracks (e.g., col. 13, lines 45-46); however,

Carey neglects to expressly mention the particular arrangement of an arbitration

specifically located at each station; however, this detail is disclosed by Hochschild, who

discloses an arbiter located at each station that evaluates requests from other stations

and selects a track on which to receive incoming data (e.g., Figure 3A, "376", "374"; col.

12, lines 48-57).

It would have been obvious to one of ordinary skill in the art to combine

Hochschild with Carey, because Hochschild shows an express means to effectively

arbitrate requests from other stations and select a track, which feature provides Carey

with an effective means of expressly providing the arbitration in the case in which Carey

uses dedicated tracks for the sending of information.

Regarding claim 5, Carey also discloses a grant multiplexor for selecting a grant

line (e.g., col. 2, lines 52-55).

Regarding claim 6, Carey also discloses plural smaller multiplexors distributed

across the chip (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 7, Carey also discloses the arbiter connected a track multiplexor

for selecting a track (e.g., col. 2, lines 52-55).

Regarding claim 8, Carey also discloses plural smaller multiplexors distributed

(e.g., col. 2, lines 53-54, "more requests").

Regarding claim 9, Carey also discloses a source queue (e.g., Figure 2, "22").

Regarding claim 10, Carey also discloses a first-in-first-out register (e.g., col. 11,

line 61).

Regarding claim 11, Carey also discloses a destination queue for incoming data

(e.g., Figure 4, "28").

Regarding claim 12, Carey also discloses a first-in-first-out register (e.g., col. 14,

line 1).

Regarding claim 13, Carey also discloses a source queue and destination queue

(e.g., Figure 2, "22", Figure 4, "28").

Regarding claim 14, Carey also discloses the source and destination queues

serve to separate a first clock domain for the on-chip communication bus from a second

clock domain for one of the plurality of on-chip components (e.g., col. 13, lines 64-67,

col. 14, lines 8-9).

Regarding claim 22, Carey also discloses sending a request from a first station to

a second station, evaluating the request and sending a grant signal (e.g., col. 5, lines 1-

4), selecting a track (e.g., col. 2, lines 52-57), sending and receiving the data at the

second station (e.g., col. 2, line 40). Carey does not expressly mention the particular

arrangement of an evaluation specifically located at each station; however, this detail is

disclosed by Hochschild, who discloses an evaluation at each station that evaluates

requests from other stations and selects a track on which to receive incoming data (e.g.,

Figure 3A, "376", "374"; col. 12, lines 48-57).

It would have been obvious to one of ordinary skill in the art to combine

Hochschild with Carey, because Hochschild shows an express means to effectively

evaluate requests from other stations and select a track, which feature provides Carey

with an effective means of expressly providing the arbitration in the case in which Carey

uses dedicated tracks for the sending of information.

Regarding claim 23, Carey also discloses sending the request is performed by an

initiator, evaluating is performed by an arbiter, selecting the track is performed by the

arbiter (e.g., col. 5, lines 1-4), sending the data or command is performed by the initiator

and receiving the data is performed by a target at the second station (e.g., col. 2, line

40).

Regarding claim 24, Carey also discloses a grant multiplexor for selecting a grant

line (e.g., col. 2, lines 52-55).

Regarding claim 25, Carey also discloses plural smaller multiplexors distributed across the chip (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 26, Carey also discloses the arbiter connected a track multiplexor for selecting a track (e.g., col. 2, lines 52-55).

Regarding claim 27, Carey also discloses plural smaller multiplexors distributed (e.g., col. 2, lines 53-54, "more requests").

Regarding claim 28, Carey also discloses a source queue (e.g., Figure 2, "22").

Regarding claim 29, Carey also discloses a first-in-first out register (e.g., col. 11, line 61).

Regarding claim 30, Carey also discloses a destination queue for incoming data (e.g., Figure 4, "28").

Regarding claim 31, Carey also discloses a first-in-first out register (e.g., col. 14, line 1).

Regarding claim 32, Carey also discloses a source queue and destination queue (e.g., Figure 2, "22", Figure 4, "28").

Regarding claim 33, Carey also discloses the source and destination queues serve to separate a first clock domain for the on-chip communication bus from a second clock domain for one of the plurality of on-chip components (e.g., col. 13, lines 64-67, col. 14, lines 8-9).

Regarding claim 40, Carey also discloses an arbitration for each station capable of receiving a request and granting permission to send information to the station that granted permission over the dedicated track (e.g., col. 2, lines 52-57). Carey does not

expressly mention the particular arrangement of an evaluation specifically located at

each station; however, this detail is disclosed by Hochschild, who discloses an

evaluation at each station that evaluates requests from other stations and selects a

track on which to receive incoming data (e.g., Figure 3A, "376", "374"; col. 12, lines 48-

57).

It would have been obvious to one of ordinary skill in the art to combine

Hochschild with Carey, because Hochschild shows an express means to effectively

evaluate requests from other stations and select a track, which feature provides Carey

with an effective means of expressly providing the arbitration in the case in which Carey

uses dedicated tracks for the sending of information.

Regarding claim 41, Carey also discloses incorporating a request priority level

and the arbiter is capable of granting permission based on the level (e.g., col. 6, lines

47-49).

Regarding claim 42, Carey also discloses the arbiter circuit connected to at least

a plurality of stations to receive request signals from the stations of the subset, the

subset comprising the station that originated the request signal (e.g., col. 2, lines 49-

52).

3.   *Claims 17-18 and 36-37 are rejected under 35 U.S.C. 103(a) as being*

   unpatentable over Carey as applied above in claims 1 and 19, respectively, in view

   of Adams (US 2001/0042147).

Regarding claims 17 and 36, Carey fails to disclose a watchdog at each station;

however, this watchdog circuit is disclosed by Adams. Adams discloses a watchdog

circuit that determines if its station has gone offline (e.g., paragraphs 64-65). It would

have been obvious to combine Adams with Carey because Adams discloses an

improvement for a system such as Carey of a data router for stations, and teaches the

advantage of using a watchdog circuit when a station is busy. Therefore it would have

been obvious to one of ordinary skill in the art to combine Adams with Carey at the time

the invention was made.

Regarding claims 18 and 37, Carey does not disclose this, but Adams does. Adams

discloses that if the station has gone offline that watchdog circuit informs a controller

connected to the system (e.g., paragraphs 64-65).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Clifford H. Knoll whose telephone number is 571-272-

3636. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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published applications may be obtained from either Private PAIR or Public PAIR.

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Business Center (EBC) at 866-217-9197 (toll-free).

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REHANA PERVEEN
PRIMARY EXAMINER
6/23/05